Building Reproductive Health Awareness among Adolescent Girls in Conflict Affected Districts of Nepal

Executive Summary

In 2004, CEDPA-Nepal in conjunction with its implementing partners, Ama Milan Kendra (AMK), the Nepal Red Cross Society (NRCS) and the Nepali Technical Assistance Group (NTAG), launched the Building Demand for Reproductive Health among Adolescents Girls in Conflict Affected Districts of Nepal Project (BuD for RH). The primary goal of project is to improve the ability of girls aged 10-19 in conflict areas to make informed decisions regarding reproductive health and to access health services. Strategies to meet project objectives included: RH education and empowerment through adolescent girls groups, health-based literacy program for out-of-school girls, networking to strengthen local engagement with health services system, and social mobilization and advocacy. The target population was 1,843 in- and 1,155 out-of-school girls in three districts specifically Baglung, Mahottari and Udayapur. During the second year 202 school aged (grades 8 and 9) adolescent boys were added as project beneficiaries.

In order to assess progress and achievements on project objectives studies were conducted using the panel design method of the girls' and the boys' programs. Five hundred seventy-eight (578) in- and out-of-school female participants and 170 male participants (all in-school) were interviewed before the start and after completion of the project. In addition, focus group discussions were conducted with parents, school teachers, and members of the Reproductive Health Coordination Committee (RHCC) to assess what enabling factors these groups have provided to help girls and boys improve reproductive health behaviors.

Linear Mixed Model Analysis showing main effects and interactions was used to examine the effects of program participation in key program objectives by district, age, schooling (for girls), caste/ethnicity and SES. Composite indices were created to measure change in key outcome variables, including RH-knowledge related variables, domestic violence, girls trafficking and sexual abuse, gender equity, communication with parents, empowerment and literacy skills for out-of-school girls. Two-way interactions– looked at principal variables of interest by time. Health-seeking behavior was also assessed. Chi-squares and multinomial logistic regression were also used for non-scale/categorical/binary variables in the boys' study.

Data from both studies indicate that girls' and boys' knowledge, attitudes and behaviors have improved, albeit to different extents, as a result of program participation. Girls' data has shown that program exposure is a highly significant ($p<.001$) predictor of better outcome scores; girls demonstrated marked improvement on all indices. They are more knowledgeable on many issues, including reproductive health, gender based violence and gender equity. All five RH indices witnessed increases of 33 percent or more

Equally if not more important, their health-seeking behavior has improved; the number of respondents who said they had visited a health facility/consulted a health professional for their RH problem, from 28 percent at baseline to 94 percent at endline. They can communicate better with their parents and others and they feel more empowered to participate in decisions which affect their lives and act of agents of change. Moreover, girls' data has demonstrated that literacy programs integrated with RH education can bring girls into the formal educational system. An impressive 45 percent of girls enrolled in school as a result of program participation. The program has also proven that adolescent girls' discussion groups over an extended period of time have provided an effective means of creating self and collective efficacy for improving health and other outcomes for adolescents. Program activities like the Girls' Congress also allow girls opportunities for individual expression, collective agency and leadership. These activities have provided a foundation on which to build future activities sustained by the girls themselves.

Thirty-six [36] villages also established resource centers with reference materials about health and adolescence. In addition, three district level Reproductive Health Coordinating Committees (one in each district) and 15 village level committees were

actively working to improve reproductive health issues in their community.

While data is not directly comparable, BuD for RH boys' program findings suggest that boys made more limited gains with respect to knowledge, attitudes and behavior. In some cases boys did not make any gains because they were already at high levels at baseline, as with health-care seeking behavior and communication with parents. However, gains in other areas in which boys had low baseline knowledge were also somewhat limited, e.g. reproductive health and gender equity.

The project is fortunate to have the possibility of building on the synergy created in the BuD for RH project with a follow on program that will use girls who participated in the program as facilitators who will conduct outreach with their peers. This process will allow participants to disseminate the knowledge they gained in the BuD program and continue apply and expand their roles as leaders and agents of change.

The Nepalese Census (2001) reports that nearly two-fifths (39 percent) of the Nepalese population is under 15 years of age and an additional 10.5 percent is between 15-19 years old.[1] The youth population numbers about 5.4 million in the country. Overall, 24 percent of the female adolescents aged 15-19 years are already mothers or pregnant with their first child. The practice of early marriage[2] (about 44 percent of women aged 15-19 years are already married) is the major factor accounting for the high proportion of teenagers who have begun child bearing.[3] Marriage during the teenage years is particularly harmful for women: autonomy is often limited and sexual activities can be uninformed perhaps even coercive and dangerous to women's health. Girls are especially at high risk due to exclusionary cultural traditions based on gender, caste and ethnicity. Due to illiteracy (63 percent of men and 35 percent of women are literate)[4], poverty and ongoing conflict, there are added risks resulting in a situation where adolescent girls are exposed to violence, sexually transmitted infections, HIV/AIDS and trafficking. There has been a growing trend of adolescents and youth suffering from sexual health problems and the proportion of adolescents and youth suffering from such problems is likely to increase further in the absence of proper knowledge and information. For example, a 2005 UNFPA study found that only 17 percent of the young people (13 percent female and 23 percent male) had correct knowledge about sexual and reproductive health.[5] Seeing the need for reproductive health programming, in 2004, CEDPA-Nepal in conjunction with its implementing partners, Ama Milan Kendra (AMK), the Nepal Red Cross Society (NRCS) and the Nepali Technical Assistance Group (NTAG), launched the Building Demand for Reproductive Health among Adolescents Girls in Conflict Affected Districts of Nepal Project (BuD for RH).[6]

Program Description

The primary goal of the BuD for RH program is to improve the ability of girls aged 10-19 in conflict areas to make informed decisions regarding reproductive health and to access health services. The target population was 1,843 in- and 1,155 out-of-school girls in three districts specifically Baglung, Mahottari and Udayapur. The program implemented in 15 Village Development Committees (VDC) covered a little more than 26 percent of the total adolescent girls (11,410) in these areas. In addition, during the second year of the project 202 school aged (grades 8 and 9) adolescent boys were added as project beneficiaries.

The specific objectives of the project are to:

- Improve RH awareness and knowledge among adolescent girls/boys in conflict areas,
- Increase literacy among out-of-school adolescent girls participating in the program in conflict areas,
- Increase girls/boys' adoption of behaviors that lead to improved RH outcomes,
- Create an enabling family and community environment to support girls/boys' program participation and access to health services.

[1] Central Bureau of Statistics, National Planning Commission, His Majesty's Government of Nepal in collaboration with UNFPA Nepal (June 2002), Population Census 2001, National Report.
[2] Early marriage is defined as marriage under the age of 18.
[3] Nepal Demographic and Health Survey 2001, Family Health Division, MOH, New ERA and ORC Macro, 2002.
[4] UNICEF Nepal Statistics 2000-2004: www.unicef.org/infobycountry/nepal_nepal_statistics.html#15
[5] VaRG (2005). Baseline Study on EU/UNFPA Reproductive Health Initiative for Youth in Asia Program in Nepal (RHIYA), conducted by Valley Research Group for UNFPA, Kathmandu, Nepal, 2005.
[6] Support was provided by USAID/Nepal and the U.S. Agency for International Development through the CATALYST consortium in year one and the Access to Clinical and Community Maternal, Neonatal and Women's Health Services (ACCESS) project in year two.

The program curriculum was based on the Better Life Options (Bhabishya Ko Chhanot) manual (CEDPA's Choose a Future!) which draws on the best practices and lessons learned from implementing the Better Life Options and Opportunities Model in Nepal, Egypt and India and CEDPA's social mobilization approach. The curricula actively involves girls and boys in discussion of topics about which they learn new information and create their own solutions to situations they encounter at home, in their neighborhood, in school, at work and with male and female peers. In addition, LaLima, World Education's Girls' Access to Education program's literacy and health-training manual was used to promote literacy among out-of-school girls. Strategies to meet project objectives included: RH education and empowerment through adolescent girls groups, health-based literacy program for out-of-school girls, networking to strengthen local engagement with health services system, and social mobilization and advocacy. The girls' BuD for RH program was implemented over twelve months, while the boys' program was of shorter duration at five months.

Choose a Future Modules

- Self Awareness
- Values Identification
- Gender Awareness
- Feelings
- Community
- Communication Skills
- Interpersonal Relationships
- Families
- The World of Work
- Puberty
- Reproduction
- Health
- Marriage, Partnership and Parenthood
- Legal Rights
- Environment
- Taking off from Here (My life beyond)

The BuD for RH program built on the success of the "Adolescent Girls Initiate for Their Reproductive Health Project" (A GIFT for RH Project) implemented from early 2000 through mid-2002. The GIFT for RH project used literacy classes to teach adolescent girls about reproductive health. A survey administered at baseline and endline showed that the program increased literacy, improved RH knowledge and behavior, communication and other life skills, and increased civic involvement and advocacy. At the start of the program, all of the girls were illiterate; after two and one half years, nearly all of the girls (96 percent) could read and 88 percent could write. Moreover, all of the adolescent girls (99 percent) who had experienced health problems reported that they shared their problems with their parents. Nearly all of the girls (93 percent) who had experienced health problems had consulted a health provider or health facilities. Almost all of the girls expressed confidence talking with their parents or other community members if they felt discriminated against. Nearly all of the girls started participating in events such as polio day, vitamin 'A' day, women's day and reading campaigns. More than three-fifths of them were involved in development activities. Nearly three-fifths of the girls talked about girls' needs or rights with community leaders or organizations.

Program Areas

The program was implemented in three areas of Nepal with different geographical and ethnic groups and traditions. In Nepal there are more than 100 ethnics/cast groups with distinct languages and cultures. The social structure of cast – origin Hindu groups is simply reflecting only three groups according to Population Monograph of Nepal Vo.1-CBS 2003. 1)Bramin/Chetri/Thakuri, 2) Janajati and 3) Dalit.

Baglung District is located in the Western Development Region of Nepal. The entire district has a hilly topography. The district' has a total population of 268,937 (2001 Census). Over 92 percent of the population is rural. The dominant ethnic population of the district is comprised of Magars, followed by Brahmins, Chhetris and Kami. Nearly three fourths of the adult males (73 percent) and over a half of the adult female population (52 percent) are literate. The net enrolment ratios at the primary and lower secondary levels are respectively 89.1 and 33.9. It ranks the highest, 19 out of 75 total districts in Nepal, of the three districts on the Human Development

Index. The HDI is a summary composite index that measures a country's average achievements in three basic aspects of human development: longevity (life expectancy at birth), knowledge (adult literacy rate and school enrolment ratios), and a decent standard of living (GDP per capita). It was created to emphasize that quality of life is critical to assessing the development of a country, not just economic growth.

Mahottari District lies in the terai (plain) region of the central development region of Nepal. It has a total population of 553,481 (2001 Census). Approximately 96 percent of the district's population is rural. The district is connected by the East-West National Highway. Yadavs are the dominant ethnic community of the district, followed by Muslim, terai Brahmins, Dhanuk and Koiri. Literacy levels are low; 45 percent of adult males and less than half this proportion (22 percent) of the female adults are literate. The net enrolment ratios at the primary and lower secondary levels are respectively 74 and 29. It ranks 59 (out of 75) based on the Human Development Index (HDI).

Udaypur is a hilly district that lies in the Eastern Development Region of Nepal. It has a total population of 287,689 (2001 Census). Approximately, 81 percent of the population is rural. The dominant ethnic communities of the district are Chhetri, Rai, Magar and Tharu. About two-thirds of adult males (65 percent) and over two-fifths of adult females (42 percent) are literate. The net enrolment ratios at the primary and lower secondary levels are respectively 85 and 36. Its HDI ranking is 21 (out of 75).

According to the UNDP Nepal Human Development Report 2004, Baglung District consistently had the highest rankings of the three program districts on several indices of development, including, human development, human poverty, gender-related development and gender empowerment. Udayapur District followed close behind with Mahottari District, a more isolated and poorer region, a distant third (Table 1).

Table 1: Development Indices[7]

Indices 2001*	Baglung	Mahottari	Udayapur
Human Development	19	59	21
Human Poverty	19	58	25
Gender-related Development	18	61	23
Gender Empowerment	14	74	47

*Smaller numbers indicate a higher ranking

Study Methodology

In order to assess progress and achievements on project objectives two separate studies were conducted, one of the girls' program and one of the boys' program. For both studies, data was collected using quantitative and qualitative techniques. In- and out-of-school female participants and male participants (all in-school) were interviewed at baseline before the start of the project and after completion of the project. In addition, focus group discussions were conducted with mothers and fathers separately, school teachers, and the members of the Reproductive Health Coordination Committees (RHCC) to assess what enabling factors these groups have provided to help girls and boys to improve reproductive health behaviors.

The studies were conducted using the "*panel design method*". Those adolescent girls and boys who were included in the baseline survey were followed up with in the endline survey. A total of 750 adolescent girls (375 in-school and 375 out-of-school) were surveyed at baseline. At endline 80 percent (n=300) of the 375 in-school girls and 278 (74 percent) of the 375 out-of-school girls were successfully contacted and interviewed. Reasons for non-interview included marriage, being away from home, having completed the Secondary Learning Certificate, and dropping out. Thus, a total of 578 (77 percent) girls were successfully interviewed at endline. A total of 193 male students were interviewed in the baseline survey. Of these 170 were successfully located at interviewed at endline. Twenty three in-school boys (22 percent) could not be interviewed due to various reasons (dropped out of school, had gone far away from the village, hospitalized etc.). All of the analysis is conducted on participants with both data points.

In addition, focus group discussions (FGD) were conducted with parents of students enrolled in the program (mothers and fathers separately) and members of the RHCC and teachers in each district. For the girls' program, a total of 33 focus group discussions were conducted at baseline and nine at endline. Twelve focus group discussions were also conducted at baseline and nine at endline for the boys program. A breakdown of these focus groups by participants and district can be seen in Tables 2 and 3. Seven to eight people participated in each FGD. FGD participants were identified in consultation with the staff of the partner NGOs and the RHCC chairperson. Efforts were made to include participants from different castes.

Three focus group discussions (one in each district) with stakeholders (members of the school management committee, reproductive health coordination committee and class management committee) were also organized for both the boys and girls' programs. Finally, nine in-depth interviews (three in each district) with program facilitators and supervisors of the partner NGOs were also conducted for the girls' program and three in-depth interviews with program coordinators (one in each district) were administered for the boys' program.

[7] Nepal Human Development Report 2004, Empowerment and Poverty Reduction, UNDP

Table 2: Girls BuD for RH Focus Groups

District	Mothers		Fathers		RHCC & School teachers		Total	
	BL[a]	EL[c]	BL[b]	EL[c]	BL	EL	BL	EL
Baglung	5	1	5	1	1	1	11	3
Udaypur	5	1	5	1	1	1	11	3
Mahottari	5	1	5	1	1	1	11	3
Total	**15**	**3**	**15**	**3**	**3**	**3**	**33**	**9**

BL=Baseline, EL=Endline

[a]2 FGDs with mothers of in-school and 3 FGDs with mothers of out-of-school girls

[b]3 FGDs with fathers of in-school and 2 FGDs with fathers of out-of-school girls

[c]FGDs with mothers and fathers were combined but separated in-school vs. out-of-school parents FGDs. In each district one FGD was conducted with in-school girls' and one with out-of-school girls' parents.

Table 3: Boys BuD for RH focus groups

District	Mothers		Fathers		Girls in same school	RHCC & School teachers		Total	
	BL	EL	BL	EL	BL	BL	EL	BL	EL
Baglung	1	1	1	1	1	1	1	4	3
Udaypur	1	1	1	1	1	1	1	4	3
Mahottari	1	1	1	1	1	1	1	4	3
Total	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**12**	**9**

Field organization and data collection

All research team members had previous experiences in qualitative as well as quantitative data collection. Field staff was given a weeklong training prior to fieldwork. Male interviewers conducted focus groups with fathers and interviews with boys, while female team members were responsible for interviews and focus groups with females. Interviews with participants were generally conducted in a private area on school grounds. Baseline data collection for the girls' program was conducted in September/October 2004 and endline data was gathered three months after program completion in December 2005. Boys' data collection occurred in September 2005 (baseline) and then again at the end of February 2006 one month after program completion.

Data analysis

The research method used for both studies (i.e. survey and focus groups) were similar but not identical. Moreover, the program for boys was shorter and contained several different topics. Consequently, data analysis was conducted separately for each group.

Adolescent Girls

To analyze the data collected at baseline and endline, the research team used the Linear Mixed Model Analysis method in SPSS version 13. This analysis method allows for analysis when working with repeated measures taken at different points in time on the same respondents/subjects. The analysis explored the effect of respondents' program participation on key program objectives. The analysis controlled for respondents district (three levels), age (two levels), schooling (two levels), caste/ethnicity (three levels) and SES (four levels). The analysis program allowed researchers to look for main effect of change as well as interaction effects between variables.

Eleven composite indices were created to measure change in key outcome variables, specifically five RH-knowledge related variables [puberty/menstruation knowledge and practices, pregnancy and delivery care, knowledge of family planning methods and sources**,** prevention and transmission of HIV and other sexually transmitted diseases; and optimal birth spacing], domestic violence, girls trafficking and sexual abuse, gender equity, communication with parents, empowerment[8] and literacy skills for out-of-school girls. These indices are sums of responses to related questions that are highly correlated (alpha correlations $\geq$ .70). Two-way interactions– looked at principal variables of interest by time (base and endline). Health-seeking behavior was also assessed.

Adolescent Boys

The data for boys was also analyzed using a combination of Linear Mixed Model analysis for scale variables and chi-squares and multinomial logistic regression for non-scale/categorical/binary variables. Similar scales were created to those in the girls' analysis where possible, specifically, OBSI, STDs/HIV, GBV and communication with parents. The boys' data did not afford the creation of a composite index for empowerment because of the smaller data and lower internal consistency.

Respondent Socio-Demographic Profile

Below is the socio-demographic profile of the 578 female and 170 male respondents who had both baseline and endline data (Table 4). These categories represent the factors and the number of levels for each factor used in the analysis.[9]

Adolescent Girls

As previously mentioned 52 percent of respondents were in-school girls. The sample was almost equally divided between all three districts. Average age for the group was 15.6 years. The majority of families depended upon agriculture as their primary source of income. The largest number of girls belonged to the Brahmin/Chetri caste.

The number of married girls doubled from baseline to endline. The majority of married girls, 84 percent, were out-of-school. Seventy-eight percent of out-of–school married girls currently were or had been pregnant versus 38 percent of in-school married girls. The majority of these respondents reported having one living child. Parental education levels were low. On a scale of 0 to 12 representing years of schooling, fathers averaged 3.7 and mothers 1.0 years of school completed.

[8]Includes self-expression, communication skills, decision-making, importance of girls' education, and confidence

[9] Marital status was not included as a factor in linear mixed model analysis because of the small number of married respondents.

Table 4: Respondent Socio-Demographic Profile

	Girls	Boys
District		
Baglung	35%	28%
Mahottari	32%	34%
Udayapur	33%	38%
Type of Respondent		
In-school	52%	-
Out-of-school	48%	-
Age*	**15.6**	**15**
Under 16	45%	42%
16 and over	55%	58%
Source of Family Income		
Services	18%	14%
Business/Craftsmanship	15%	7%
Farming	62%	75%
Non-skilled	5%	4%
Caste/Ethnicity		
Brahmin/Chetri (High)	44%	38%
Janajati	26%	51%
Dalit (Low)	29%	11%
Married	BL=4%, EL=9%	BL=0%, EL=0%
N	578	170

*The age division for boys was different than girls. Boys were divided into 'under 15' and '15 and over' in order to obtain two groups that were similar in size.

Adolescent Boys

BuD for RH was only implemented with in-school boys. The largest numbers of boys were from Udayapur (38 percent). The majority of respondents were aged 15 years and over. As with the girls, the main source of income for these boys' families was farming. In contrast to the girls, about half of the boys were from the Janajati caste/ethnicity. None of the respondents were married.

Findings

Drop-out Rates

The overall drop-out rates for the program for girls was very low, 5 percent. Non-completion was lower for out-of-school girls (7 percent) versus in-school girls (4 percent). None of the boys dropped out of the program.

Adolescent Girls

Literacy Skills

Out-of-school girls experienced significant gains in literacy. Respondents' mean score on a literacy scale of 1 to 5, increased 22 percent, from 3.1 at baseline to 3.8 at endline. Not only did a greater number of girls report being able to read newspapers, pamphlets, or letters, but reading skills improved for those girls that had some level of literacy at baseline as well. While higher castes/ethnicities had higher scores at baseline, the rate of improvement for all castes was not

significant between baseline and endline.

In addition, 85 percent of respondents reported passing the literacy examination in their literacy course. There were district-wise differences with respect to the percentage of girls passing the literacy exam and the number of those enrolling in school. The district of Mahottari had the best outcomes with respect to both these variables. Ninety-two percent of girls passed the literacy exam in Mahottari, versus 84 percent in Udayapur and 79 percent in Baglung.[10] An especially important result of the program was the rate of school enrollment; 45 percent of all out-of-school girls participating in the program enrolled in primary schools (n=514) as a result of program participation. This number continues to increase as more girls have enrolled in school since the end of the program.

During the National Girls' Congress, one 19 year old resident of Udayapur who had dropped out of school stressed the impact of BuD, stating that 'education had opened her eyes'. After completing BuD she enrolled in seventh grade at the local high school. One representative from the District Education Office even noted how drop out rates had fallen in program areas,

> *In a society with low literacy, high school drop outs and early marriage, the implementation of BuD has brought many changes in rural areas helping young rural girls to overcome their problems. The rate of school drop out in program implemented areas has drastically reduced. [Mahottari District]*

RH awareness and knowledge

RH knowledge on the five composite indices increased significantly for participants as a result of program participation. Knowledge with respect to puberty, pregnancy, family planning, STIs/HIV, and optimal birth spacing interval witnessed increases of 30 percent or more (Table 5). Those areas in which participants had the lowest knowledge at the outset of the program, e.g. OBSI, STDs/HIV and family planning showed the greatest increase.

Table 5: RH Indices - Mean Scores for Girls

Index*	Mean Scores		Scale Range		% Increase
	Baseline	Endline	Lower	Upper	
Puberty	1.3	2.4	0	3	37%
Pregnancy	1.6	2.9	0	4	33%
Family planning	1.1	2.7	0	3	53%
STDs/HIV	1.1	3.5	0	5	48%
OBSI	0.9	4.4	0	5	70%

*All differences are statistically significant at a .000 level

Both age and school status were significant in all RH knowledge indices. Older age was a predictor for higher scores at baseline and endline as was being in-school (Table 6). However, there was not a significant interaction for age; younger and older girls made similar gains in magnitude from baseline to endline on all of the scales except OBSI for which younger girls made greater gains. In contrast, while both in- and out-of-school girls' RH knowledge improved, schooling was a significant interaction; out-of-school girls made greater gains between baseline and endline on three of the five indices, specifically puberty, family planning, and OBSI. Nonetheless as noted above, at endline older and in-school girls demonstrated the highest scores.

District had a significant effect on all of the RH-related indices, i.e. the rate of improvement

[10] Statistically significant at a .05 level

differed most often by district with Mahottari making the smallest gains between baseline and endline. Udayapur was consistently associated with the best results. Despite not having the highest scores at baseline, by endline girls in Udayapur scored consistently higher on all of the RH indices with the exception of family planning for which endline scores were similar in all three districts.

Table 6: Mean Scores by Key Control Factors/Socio-demographic Variables

	Puberty		**Pregnancy**		**FP**		**STIs/HIV**		**OBSI**	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Time	1.271	2.381***	1.584	2.86***	1.094	2.739***	1.105	3.546***	0.870	4.378***
District										
Baglung	0.945	2.311***	1.359	3.047***	0.810	2.776***	1.150	3.672***	1.199	4.407***
Mahottari	1.598	2.243	2.033	2.134	1.227	2.637	1.230	2.892	0.300	4.096
Udayapur	1.269	2.590	1.362	3.399	1.243	2.803	0.936	4.072	1.111	4.631
Schooling										
Out-of-school	1.041	2.146	1.135	2.617	0.83	2.605	0.532	2.927	0.547	4.15
In-school	1.501	2.616	2.034	3.103**	1.357	2.872**	1.678	4.164	1.193	4.606
Age										
Young	0.934	2.145*	1.390	2.746	0.886	2.632*	0.883	3.297	0.715	4.248
Old	1.607	2.617	1.779	2.974	1.301	2.845	1.328	3.795	1.025	4.508

*p<.05, **p<.01, ***p<.001

The variables of caste/ethnicity and family source of income were not statistically significant contributors to change with respect to RH-related knowledge. The one exception to this was OBSI; lower castes made greater gains between baseline and endline, however differences while significant (p<.01) were weak in magnitude.

Health-Care Seeking Behavior

Participants also gained greater familiarity with community health services over the life of the program. The percentage of girls reporting visiting a health facility in the previous year increased from 60 percent at baseline to 80 percent at endline.

Girls who reported visiting a health facility when they experienced a RH problem (N_{BL}=153, N_{EL}=173) also improved as a result of program participation. The greatest increase was seen in the number of respondents who said they had visited a health facility/consulted a health professional about a RH problem, more than a 65 percent increase. Similarly, the number of girls who had talked to their parents about their health issue and sought their support increased by 20 percent; at endline all but one girl had discussed the issue with a parent.

Program facilitators confirmed these changes. They observed how after enrolling in NFE classes, the girls became more open and frank, discussed RH issues and their personal problems without hesitation, and also started visiting health facilities or health workers for consultation or treatment services. They also stated that the girls had learned a lot about family planning and that married girls had started using contraceptives for birth spacing. Anecdotal information also suggests that more pregnant women are visiting health centers. Reflecting the increased use of health facilities by girls/women, in Mahottari, girls insisted on having a separate room with curtains for their check-ups. Similarly, in Udayapur as a result of the program, three VDCs filled previously vacant posts with female health workers.

Table 7: Non-RH-related Indices - Mean Scores by Key Control Variables/Socio-demographic Variables

	Domestic Violence		Sex Abuse & Trafficking		Gender Equity		Communication with Parents		Empowerment	
	BL	**EL**	**BL**	**EL**	**BL**	**EL**	**BL**	**EL**	**BL**	**EL**
Time	0.677	2.463	2.884	5.369	3.400	6.572	4.644	5.723	15.051	18.463
District										
Baglung	0.353	2.318***	2.566	5.345***	3.305	6.153***	4.494	5.409	14.732	17.945
Mahottari	0.331	2.231	2.961	4.924	3.728	6.746	4.808	5.993	15.047	18.486
Udayapur	1.348	2.840	3.123	5.837	3.166	6.817	4.631	5.767	15.375	18.958
Schooling										
In-school	0.847	2.650	3.622	5.707***	3.688	6.812	4.859	5.92	16.225	19.207***
Out-of-school	0.508	2.276	2.146	5.031	3.111	6.333	4.430	5.526	13.877	17.720
Age										
Young	0.629	2.363	2.476	5.193**	3.223	6.402	NA	NA	14.432	18.309***
Old	0.726	2.564	3.291	5.545	3.576	6.742	NA	NA	15.670	18.618

*p<.05, **p<.01, ***p<.001
NA- Not Applicable

Gender-Based Violence

Domestic violence knowledge and stance was an issue on which girls started out with a very low baseline score (Table 8). However, it was one of the indices for which they made the greatest gains, with scores increasing 60 percent. There was significant interaction for district. Girls living in Baglung and Mahottari made the greatest gains over time; however, those from Udayapur had the highest baseline and endline scores. Schooling was also significant as a main effect, i.e. in-school girls had higher baseline and endline scores. However, the rate of improvement did not differ between baseline and endline, i.e. out-of-school counterparts made equal gains in magnitude (Table 7).

Table 8: Domestic Violence and GBV-related Indices - Mean Scores for Girls

Index*	Mean Scores		Scale Range		% Increase
	Baseline	Endline	Lower	Upper	
Domestic violence	0.7	2.5	0	3	60%
GBV other**	3.1	5.4	0	7	36%

*All differences are statistically significant at a .000 level
**Sexual abuse and girls' trafficking

Girls had greater knowledge at baseline of issues related to sexual abuse and girls' trafficking than most other topics discussed in the session (GBV other). Consequently they made sizeable, although somewhat smaller gains on this index at endline (Table 8). As with domestic violence, the rate of improvement between baseline and endline differed by district and schooling. Baglung and Udayapur made larger gains but Udayapur once again had the highest baseline and endline scores. In addition younger and out-of-school girls made greater gains in magnitude between baseline and endline but remained at lower levels at endline (Table 7).

Communication with Parents

Girls' communication with their parents also clearly improved as a result of program participation. On a composite index ranging from 1 to 7, girls' reported ease in communicating

with parents increased 18 percent (from 4.6 to 5.7). While at baseline girls from Mahottari, in-school girls and higher castes had better baseline scores than their respective counterparts, all participants made similar gains in magnitude between baseline and endline.

Gender Equity

Participants' score with respect to gender equity awareness and attitudes almost doubled from baseline to endline. On a composite scale ranging from 0 to 8, average score increased from 3.4 to 6.6 (a 40 percent increase). A greater percentage of girls at endline were aware of ways and realms in which society treats boys and girls differently. More girls also felt that girls were as mentally and physically capable as boys and were able to do similar jobs and earn as much money. While older age and in-school status were associated with higher overall scores at baseline and endline, there was not a significant interaction, i.e. the rate of improvement did not differ over time by age or schooling. District however was a significant interaction. Although Mahottari had the highest score at baseline, over time girls in Udayapur made the greatest gains and had scores equal to Mahottari at endline. Gender equity was also one of the indices for which source of family income was a significant interaction; those with families employed in the non-skilled sector made the smallest gains.

Empowerment

Girls' sense of empowerment also improved as a result of program participation, both as individuals and as a collective force. On a twelve question empowerment composite index ranging from 4 to 22, girls' score increased 17 percent from 15.4 at baseline to 18.5 at endline. Components of the empowerment index included, self-expression/ease of communication; participation in decision-making on family issues and others that affected their lives, e.g. marriage, family size, birth spacing; importance of education; and thoughts about future ambitions. As with other indices older age, in-school status and residence in Udayapur were predictors of a higher score at baseline and endline, as was being higher caste/ethnicity. However, only age and schooling were significant as interaction terms for Empowerment; younger girls and out-of-school girls made greater gains in magnitude between baseline and endline (Figure 1). Younger girls almost 'caught up' with their older counterparts by endline.

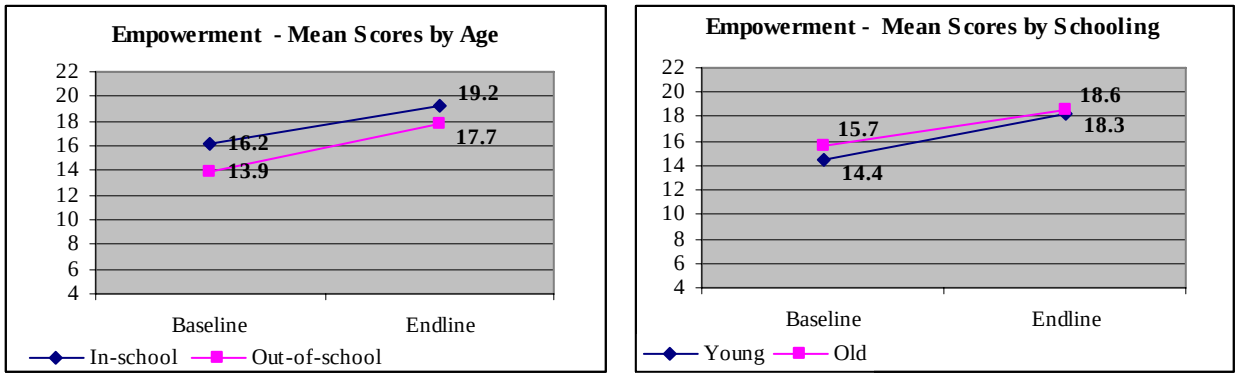

Figure 1

Girls also exercised collective efficacy by engaging in collective community actions to promote changes in behaviors associated with health and other norms. During the life of the program girls helped organized community events addressing critical issues in health (National

Condom Day; World AIDS Day; International Women's Day). A National Girls' Congress [February 26-27], and three district level congresses were also organized by girls to identify priorities for advocacy and strategies to address them. During the National Congress more than 70 adolescent girls, senior district and local level government and NGO officials[11], and the parents of participants discussed the problems and issues of adolescents.

This process was participatory and interactive; first girls identified a range of issues of concern to them and discussed and analyzed aspects of them until they reached a consensus on two priority issues and approved them for implementation. One participant described the process,

> *Whether in the central level like this or the village level, we take the decision following intense debate and discussion. All members are given equal opportunities to express their views, as these are the problems of all. We all are leaders and workers. [15 year old girl, Mahottari District]*

In-school and out-of-school girls raised similar issues, including menstrual taboos, early marriage, girls' trafficking, gender discrimination, STD/HIV prevention, caste discrimination, domestic violence as well as many of the other topics discussed during BuD for RH. By the end of the Congress, girls identified two priorities, specifically menstrual taboos and HIV prevention and awareness.

Girls also discussed their past efforts to create awareness on many of these issues. [In-school girls] even cited examples for which their efforts had brought about change. One of the most striking changes dealt with menstrual taboos. After participating in the program, girls discussed the issue with their parents and decreased the days they would have to be isolated during menstruation from 22 to 5. They were also able to delay the marriage of a friend, encourage parents to send their daughters to school or NFE classes, encourage sisters to use contraceptives for birth spacing and obtain regular ANC, manage drinking water supply by using local resources, pressure the School Management Committee (to a limited extent) to provide resources for extra-curricular activities, and work with local NGOs to introduce skills-based training for 50 girls in Udayapur.

In the future they stated they would continue to disseminate knowledge through discussions with community members as well as street drama. They would also target specific groups, holding discussion sessions for parents to discourage early marriage, dowry system and caste discrimination, meet with pregnant mothers on ANC, hold meeting for male adults on domestic violence. They also pledged to advocate for the improvement of health facilities with respect to the confidentiality, availability of essential drugs and availability of female health workers at health facilities. They intended to mobilize available resources in the community and the knowledge and skills gained by us through the program.

By participating in discussions and debates, the participants practiced their ability to work as catalytic agents to mobilize the community to defend the rights of adolescent girls. The knowledge and skills they acquired can make them future leaders who can contribute to change locally and nationally.

The feeling of empowerment was voiced by several participants who were now raising RH awareness in their neighborhoods. As one participant stated,

> *Every woman should be given the right to decide about her body. [16 year old in-school girl, class 9]*

[11] District and government officials included District Education Officers, District Health Officers, Local Development Officers, Women Development Officers and District level NGO representatives

Whereas before sexuality and RH issues were not widely discussed, participants now felt empowered to discuss these topics. They did not hesitate to talk about reproductive health. As one participant from a conservative Muslim family stated,

> *Since we have been facing many problems like early marriage, trafficking and gender discrimination, we have to raise them. It is not my problem alone. By listening to the voices of all, we can achieve better results in the project implementation. [14 year old girl, Mahottari District]*

> *Our efforts are still small and we need to take more drastic steps to prevent early marriage. We need not hesitate to discuss about the growth of our body and complications of early marriage in our life. [16 year old girl, Baglung District]*

The successful completion of the Girls Congress was not an end in itself but the beginning of a process by which girls can continue to act collectively to bring about change through follow-on activities. After the congress, in every district the girls held an advocacy workshop with the district stakeholders. In Baglung district, village and district level networks were formed as a result of the congress.

Moreover, many of the Adolescent Girl Groups (AGG) formed initially as discussion groups for the program have continued functioning beyond the life of the program and are serving as platforms for civic action. In Udayapur, 10 of 36 in-school AGGs and 10 of 15 out-of-school girls AGGs are functional. Similarly, in Baglung 10 of 26 in-school AGGs and 10 of 15 out-of-school AGGs remain active. In Mahottari 12 of 15 out-of-school AGGs are functioning. They are now involved in community activities too. For example in Udayapur district, the AGGs advocate twice a month for pregnant women to have regular check up and healthy diets. They also actively participate in vaccination programs, reading campaign days, and women's days. In Baglung district, the AGGs have formed VDC level as well as district level networks, which work on health campaigns, cleaning streets and maintaining a 'Girl Youth Voice' notice board in each VDC for publishing articles written by girls. In Mahottari, girls manage a savings and credit group.

Girls from different districts also participated in exchange visits to learn from one another's experience. After visiting Baglung, girls from Mahottari were more vocal in a health and hygiene campaign.

Enabling [supportive] family and community environment

> *The adolescent girls have changed the attitudes of local communities towards education, health, RH and other related issues. [Chairman, NTAG]*

All of the parents of out-of-school girls in FGDs were aware of the non-formal education classes organized in their community and were in favor of encouraging out-of-school girls to attend these NFE classes to learn new relevant and useful information. Almost all of the participants said that they would send their daughter to attend other non-formal education classes. They also agreed on the importance of enrolling girls in school. Some advantages of an education they cited were relative ease of employment, learning new things, a bright future, and independence. Most participants said that girls should be educated until they obtain their Secondary Learning Certificate (SLC). Some participants also felt that girls should be educated up to the MA level. Participants were also asked why girls are not sent to school. The most frequently cited reasons were poverty, the need to assist in household chores, a lack of awareness,

early marriage and a higher value of sons in the community. A few participants from Mahottari and Udayapur said that since girls will eventually reside in somebody else's house, it is not worth spending money educating them.

Expressed support from parents and the community on issues that affected these girls' lives increased. During the National Girls' Congress parents', teachers' management committees, and the district health education groups all pledged to fully support all of the activities organized by the girls, to pressure local NGOs to adopt social inclusion in planning and programming, to create an enabling environment for schooling, and to organize discussion groups among parents. Representatives of the District Health and District Education Offices said their offices would also work to improve coordination at the implementation and policy levels between governmental and non-governmental organizations.

Support for the Girls' Congresses came from both the district and national level. Thirty-three policymakers at the district level and six at the national level participated in the Girls' Congresses. In addition, the congresses were covered five times in the national press and ten times at the district level.

Thirty-six [36] villages also established resource centers with reference materials about health and adolescence. In addition, three district level Reproductive Health Coordinating Committees (one in each district) and 15 village level committees were actively working to improve reproductive health issues in their community.

Adolescent Boys

The adolescent boys' program was shorter in duration than the girls' program. During the five month implementation period boys covered most of the same topics discussed in the girls' curriculum.

RH Awareness and Knowledge

Outcomes for RH awareness and knowledge were mixed. While increases in participants' knowledge and awareness with respect to STDs/HIV, puberty/adolescence, family planning and OBSI knowledge were statistically significant, the magnitude of these increases varied greatly (Table 9). Family planning and puberty/adolescence related knowledge were the two areas which demonstrated the greatest increase.

Table 9: Boys' RH-Related Knowledge

	Mean Scores		Scale Range		% Increase	Signif.
	Baseline	Endline	Lower	Upper		
No. of puberty changes cited	2.9	3.6	NA		19%	**
FP sources in village	1.8	1.9	0	2	5%	*
No. of FP methods named spontaneously	2.3	3.5	NA		34%	**
STDs/HIV Index	2.0	2.3	0	5	6%	**
OBSI Index	1.5	2.2	0	5	14%	**

**<.01, *<.05
NA- Not Applicable

Knowledge of family planning methods and puberty changes were the only two RH-related indices for which control factors, specifically, district, ethnicity and age were significant as main effects (Table 10). Boys in Baglung generally had the highest baseline scores. In addition, older boys and higher castes were also associated with higher scores. However, with the exception of knowledge of puberty changes for which there was a significant interaction for district, all groups made similar gains between baseline and endline.

Table 10: RH Mean Scores by Key Control Factors/Socio-demographic Variables

	Puberty Changes		FP Sources		FP methods		STIs/HIV		OBSI	
	BL	**EL**	**BL**	**EL**	**BL**	**EL**	**BL**	**EL**	**BL**	**EL**
District										
Baglung	3.361	3.458*	1.722	1.807	2.645	3.909	NA	NA	1.764	2.578
Mahottari	2.290	3.357	1.787	1.943	2.044	3.430	NA	NA	1.560	2.385
Udayapur	2.915	3.784	1.843	1.926	1.960	3.271	NA	NA	1.110	1.504
Ethnicity										
Dalit	2.475	3.086	NA	NA	1.764	3.513	NA	NA	NA	NA
Janajati	2.709	3.611	NA	NA	2.107	3.182	NA	NA	NA	NA
Brahmin/Chetri	3.383	3.902	NA	NA	2.778	3915	NA	NA	NA	NA
Age										
Young	2.637	3.303	NA	NA	NA	NA	NA	NA	NA	NA
Old	3.074	3.762	NA	NA	NA	NA	NA	NA	NA	NA

NA-Not Applicable
*p<.05, **p<.01, ***p<.001

Boy's RH-related attitudes improved as well, specifically opinion on appropriate marriage age and decision-making on family size and spacing. The age respondents considered appropriate for marriage increased from 20.9 years at baseline to 22.3 years at endline. District and ethnicity were significant as main effects. Mahottari was associated with the best outcome (22.2 years vs. 21.3 for the other districts), as were higher castes. However, over time all groups made similar gains. Similarly, the percentage of respondents who felt the decision on family size and spacing should be made jointly by the husband and wife increased 16 percent from 72 percent to 88 percent. Multinomial logistic regression indicated that ethnicity was slightly significant (p=.030) with higher castes associated with more favorable attitudes.

Health-Care Seeking Behavior

Respondents had reported favorable health-care seeking behavior at baseline; consequently, differences on health-care seeking variables between baseline and endline were not statistically significant. Ninety percent of boys at baseline and endline survey preferred to visit a health facility in case of illness. Moreover, approximately 97 percent of respondents had talked to their parents about their health problem and all of them said they had received support for treatment from parents.

Communication

As with health-care seeking behavior, at baseline respondents had already reported high levels and relative ease of communication with parents. Consequently there was no change in this index over time. On a scale of 1 to 7, respondents' mean score was 5.6 at both baseline and endline. Comfort levels talking to community/out of family members also did not improve over

time, averaging 2.1 (comfortable) on a scale of 1 (not comfortable) to 3 (very comfortable) at baseline and endline. Mahottari was associated with higher scores, with boys from that district voicing the greatest comfort (p=.000). Nonetheless, when asked how they had changed as a result of program participation, the largest number of boys (20 percent) said that they could communicate better with friends and community members.

Gender-Based Violence

The GBV index created for boys combined the two GBV scales created for girls, namely domestic violence and trafficking and sexual abuse. Respondents' mean score on this scale (ranging from 0 to 10) increased almost 10 percent from 4.3 at baseline to 5.2 at endline (p=.000). Interestingly, Mahottari was associated with markedly better outcomes; the baseline score for Mahottari (X=5.2) was greater than or equal to endline scores for the two other districts. Ethnicity was also significant as a main effect; Brahmin/Chetri had higher scores than Janajati (p=.004). However, the rate of improvement between baseline and endline for by district and caste/ethnicity was the same for all groups.

Gender Equity

Attitudes on gender equity which included questions on whether girls are as physically capable, mentally capable, can earn as much money and can do the same jobs, were another area in which respondents showed no improvement. However, unlike some of the previous variables, most notably health-care seeking behavior and communication with parents, respondents did not start out with high scores at baseline. Awareness of gender inequity, i.e. ways in which boys and girls are treated differently, including in work and education did not increase over time.

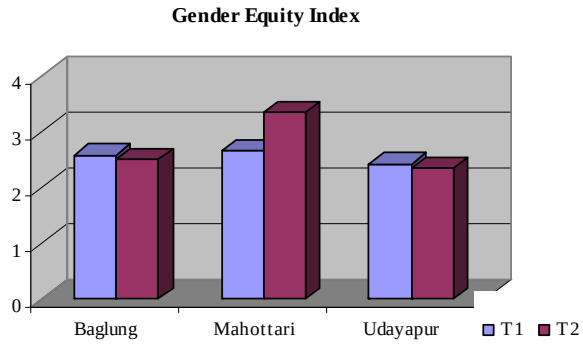

Figure 2

The only significant interaction for gender equity attitudes was district (Figure 2). As with gender-based violence Mahottari made the greatest gains and once again it had higher scores at baseline than both other districts at endline.[12] In fact, the other districts showed no improvement.

Importance of Education

Respondents opinion of the importance of education for boys did not increase over time; on a scale of 1 (not important) to 3 (highly important), most boys considered education moderately important. As with several previous variables Mahottari had higher scores at baseline than both other districts at endline. However, all groups made similar gains in magnitude between baseline and endline.

Decision-making

Results were also mixed with respect to respondents' attitudes on how much input they should have in decision-making, both in relation to family matters and issues that directly affect their own lives. Many of the variables for which there was no statistically significant change

[12] When district is included as an interaction term, district becomes significant as a main effect.

were already high at baseline.

Parents did not seek out participants' ideas/advice on family matters more frequently than baseline, which respondents claimed was occasionally. However, change was evident in the percentage of boys who felt that parents should seek out their ideas, increasing from 79 percent to 89 percent (p=.018). The number of boys who said they would try to convince their parents if they do not listen to their ideas was quite high at baseline 90 percent, and consequently did not show statistically significant increases at endline. Respondents did however, express a more constructed and proactive reaction if their parents proposed to marry them off before an age they considered appropriate. On a scale of 1 (accept their decision) to 4 (try to convince them to postpone the marriage), mean score increased from 3.18 to 3.33, p=.010). District and ethnicity were significant as main effects. As with other non-RH variables Mahottari had a higher baseline score than both other districts endline scores. Brahmin/Chetri caste/ethnicity also had better outcomes than Dalit. Nonetheless, the rate of improvement was similar for both district and ethnicity.

Civic Involvement

Finally, civic involvement improved somewhat. A greater percentage of boys reported being members of youth groups in their community at endline. However the magnitude of this increase was marginal, from 42 percent at baseline to 51 percent at endline, statistically (p=.047).

Discussion

Data from both studies indicate that girls' and boys' knowledge, attitudes and behaviors have improved, albeit to different extents, as a result of program participation. Girls' data has shown that program exposure is a highly significant (p<.001) predictor of better outcome scores; girls demonstrated marked improvement on all of the eleven indices. They are more knowledgeable on many issues, including reproductive health, gender based violence and gender equity. Equally if not more important, their health-seeking behavior has improved; they can communicate better with their parents and others; and they feel more empowered to participate in decisions which affect their lives and act of agents of change. Moreover, girls' data has demonstrated that literacy programs integrated with RH education can bring girls into the formal educational system. An impressive 45 percent of girls enrolled in school as a result of program participation. Survey data illustrating the relative success of Mahottari may be explained in part by the presence of a very dynamic program manager who oversaw the literacy program. He made scholarships available to girls who could not afford the fees and also facilitated the matriculation with the local primary schools. This apparently did not happen in Baglung and particularly in Udayapur where there were no girls who enrolled in schools. Another possible contributing factor to the lack of enrollment in school for girls in Udayapur could be their older age on average (16.8 years) versus Baglung (14.4 years) and Mahottari (14.1 years).

The factors most often associated with differential outcomes were age, schooling and district.[13] Although older girls generally started out with more favorable scores at baseline than their younger counterparts, both benefit equally from the program on the majority of the indices, i.e. the rate of improvement did not differ between baseline and endline. Those indices on which younger girls made greater gains were OBSI knowledge, sexual harassment and trafficking, and empowerment. Similarly, in-school girls had higher baseline scores on all the indices, but out-of-school girls made greater gains on half of the scales, specifically puberty, family planning, OBSI,

[13] Better outcomes associated with Mahottari district may be partly due to possible preparation of participants before the survey.

sexual harassment and trafficking, and empowerment. The most frequent significant interaction term was district for all but two of the scales (communication with parents and empowerment). Caste/ethnicity and family source of income were rarely significant.

Adolescent girls' discussion groups over an extended period of time have also provided an effective means of creating self and collective efficacy for improving health and other outcomes for adolescents. Activities like the Girls' Congress also allow girls opportunities for individual expression, collective agency and leadership. These activities have provided a foundation on which to build future activities sustained by the girls themselves.

While data is not directly comparable, BuD for RH boys' program findings suggest that boys made more limited gains with respect to knowledge, attitudes and behavior on many of the subjects discussed in this report. In some cases boys did not make any gains because they were already at high levels at baseline, as with health-care seeking behavior and communication with parents. However, gains in other areas in which boys had low baseline knowledge were also somewhat limited, e.g. reproductive health and gender equity. This may in part be explained by the shorter duration of the program, five months versus one year; topics may not have been discussed with as much detail as in the girls' program. Interestingly enough in contrast to the girls' data, age was rarely if ever a significant factor in the analysis. District was however a significant interaction for many of the variables

The project is fortunate to have the possibility of building on the synergy created in the BuD for RH project with a follow on program that will use girls who participated in the program as facilitators who will conduct outreach with their peers. This process will allow participants to disseminate the knowledge they gained in the BuD program and continue apply and expand their roles as leaders and agents of change.